

Application Error Reporting

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Office[®] xp



Technical Airlift

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Problem

- Market situation:
 - Press and customers consider PC software inherently unstable.
 - Walt Mossberg 9/30/99: Dear Diary: I'm Tired Of the Way Windows Crashes and Freezes!
- Data concurs
 - 'Fatal Events' are top PSS issues
 - MS satisfaction survey: crashes are #1 complaint
 - Crashes are worse than other incidents
- Current data isn't actionable for product team

PSS Data

- 'Fatal Events' are top issues
 - Table shows Tasks\Fatal Events as % of app labor
 - Installation\Fatal Events are Top 7 Office2000 issues
- PSS crash data rarely actionable
 - We just get a bill...

App	97	2000	% Δ
Word	15.4	15.1	1.9
Project	13.1	11.3	13.7
PowerPoint	5.3	8.5	-60.4
Outlook	8.4	8.3	1.2
Excel	13.9	7.4	46.8
Publisher	8.5	6.9	18.8
FrontPage	3.3	3.8	-15.2
Access	4.6	4.5	2.2

Symptoms of Denial

- Common product team myths:
 - We don't have a lot of crashing bugs
 - We have a newer code base (than Office)
 - We have a simpler code base (than Office)
 - We know why we crash (third party drivers)
 - We already know our problem areas
 - We already have exception handling
- Take our heads out of the sand...

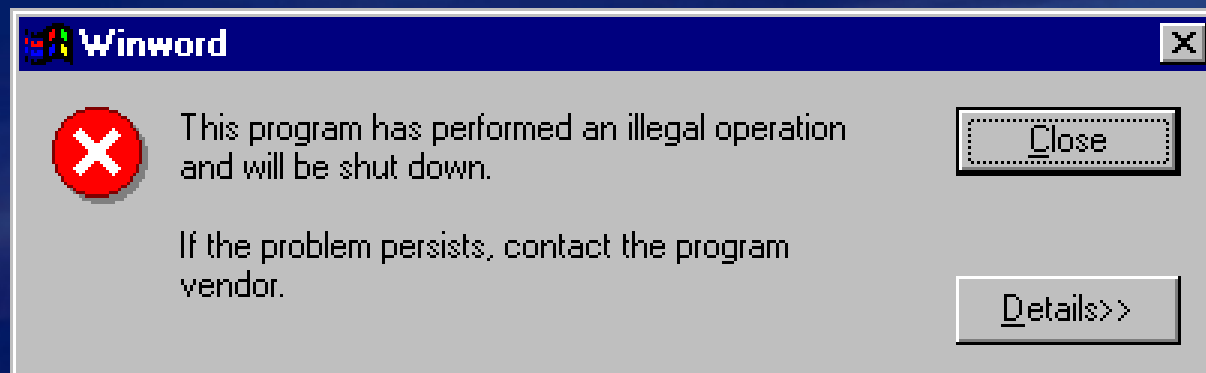
Robustness And Reliability

- Robustness: Bad things happen, deal with it!
 - Crash safety net to minimize user impact
 - Allow users to save post-crash (Word, Excel and PPT)
 - Office Hang Manager forces faults (Word, Excel and PPT)
 - Timed recovery save (Word, Outlook, PPT+Excel, Publisher)
 - Corrupt document recovery (Word and Excel)
 - Safe mode to auto-fix cyclic boot crashes (all)
 - Post-reboot recovery UI (Word, XL, PPT)
- Reliability: Stop bad things from happening!
 - Crash tracking and reporting (Watson)
 - Gather data 'from the wild'
 - Pre- and post- ship, get data right to developers

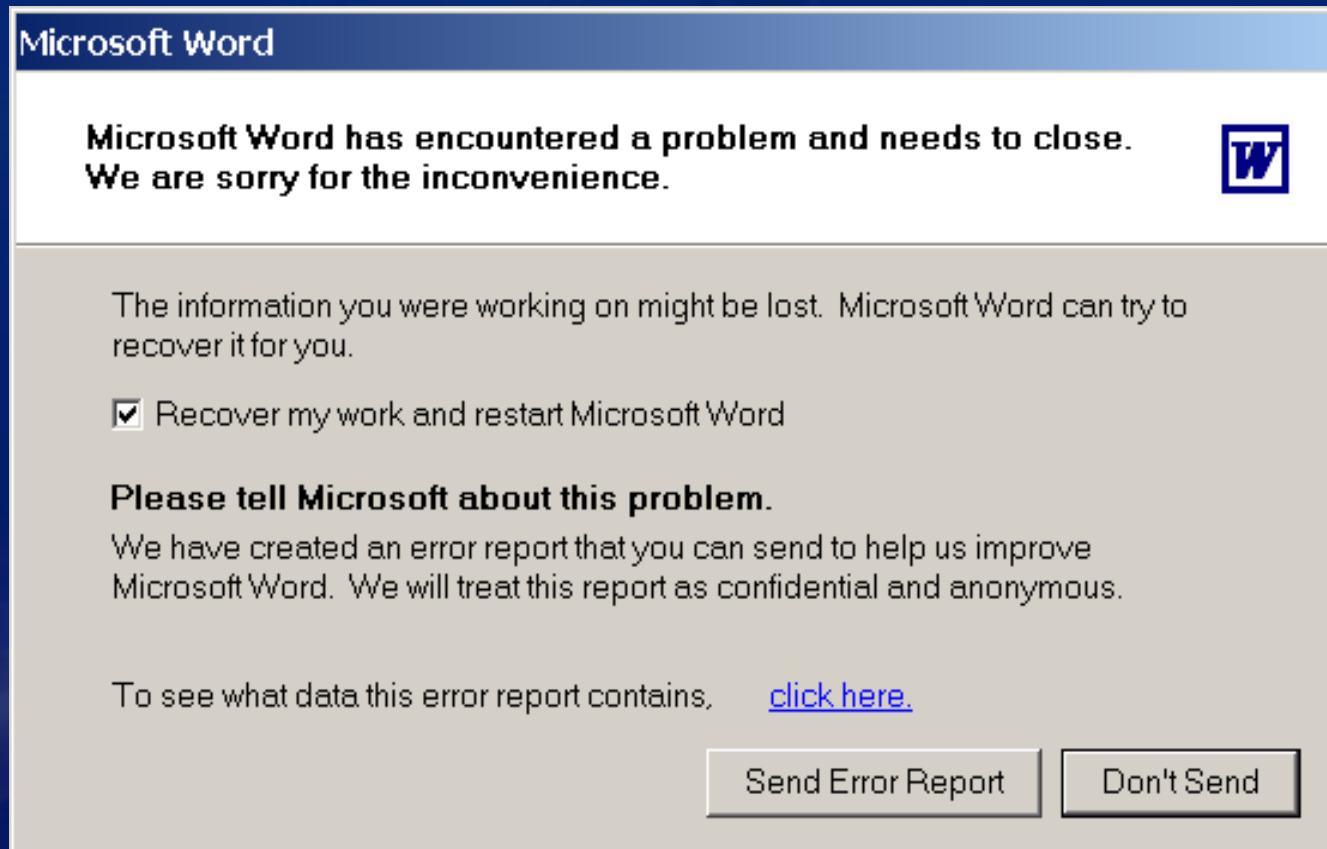
Watson Clients

- All Office XP applications
 - Core: Word, Excel, Outlook, PowerPoint, Access, and FrontPage
 - Office Family: Publisher, Project, Visio and MapPoint
- MSN Explorer (Mars)
- IE (Download via WindowsUpdate for 5.0 and 5.5, integrated in IE6)
- Whistler (all applications)
- Visual Studio 7
- NetDocs
- Windows Media Player
- Works
- Money
- More each week...

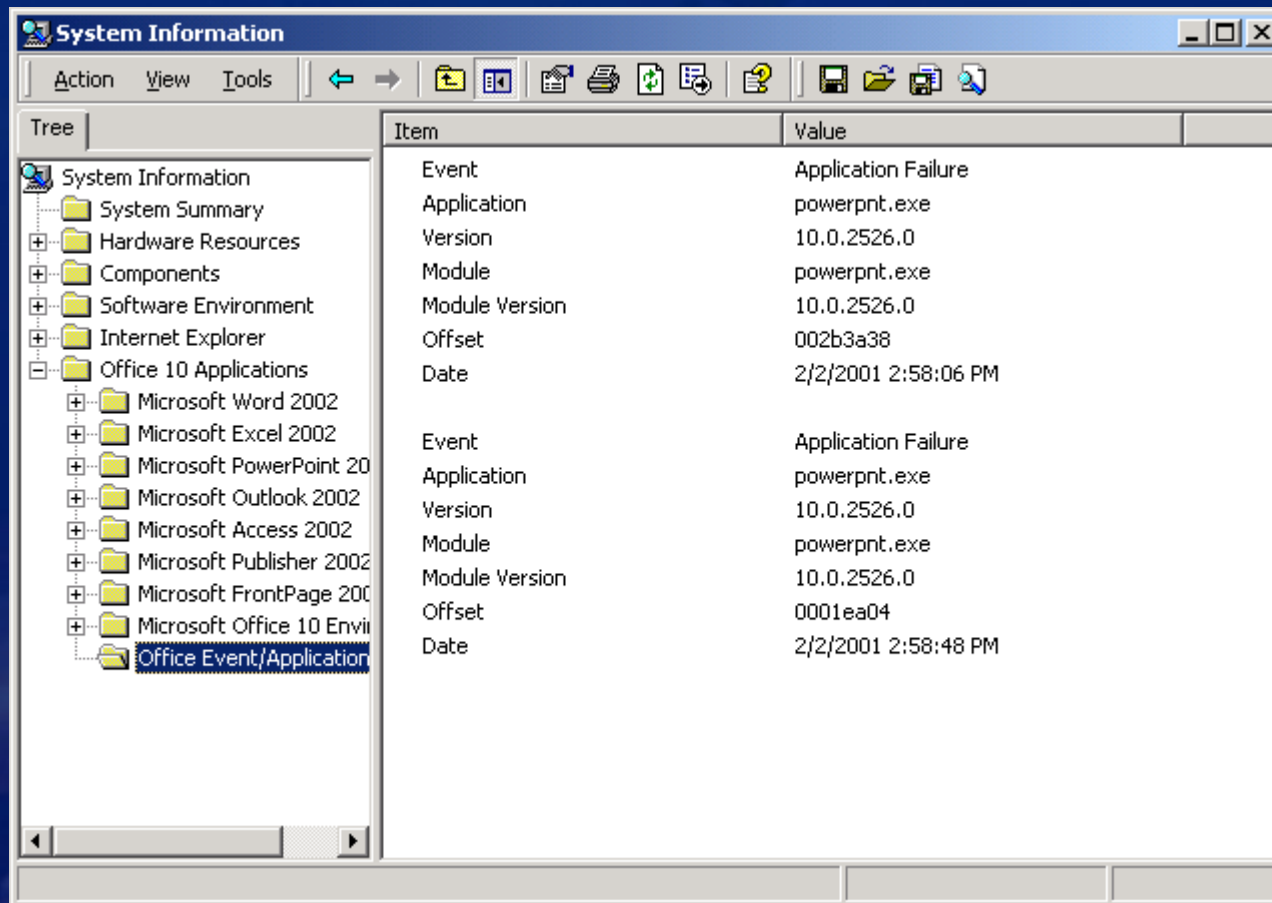
Existing Crash Dialogs



New Crash Dialog



Event Log Records Incident



“Bucketing”

- Problem:
 - Directory with a million crash dumps isn't actionable
- Solution:
 - Create unique 'buckets' to group incidents
 - AppName, AppVersion, ModuleName, ModuleVersion, Offset into module...
- What You Get:
 - Per bucket hit counting, data gathering, and server response (ala extendable alerts)
 - Only need to gather finite data per

Back At Redmond...

Bucket 462808 - Microsoft Internet Explorer

File Edit View Favorites Tools Help Links »

Back Forward Stop Home Search Favorites History

Address <http://officewatson/dwi/ViewBucket.asp?Database=4&iBucket=462808> Go

DW.NET (Live external) Bucket '462808'

[Home] [How to Debug] [Configuration]

☒ Callstack Tree ☒ Raid Bugs ☐ User Response Bugs ☐ Hits By Day ☐ DataWanted Table ☒ Cab Table ☒ Update Bucket Values

DW.NET Bucket Table

iBucket	szBuiltBy	szAppName	szAppVer	szModName	szModVer	offset	cHits	cDataWanted	szResponse	iRaidBug
462808	OFFPPTS	powerpnt.exe	10.0.2526.0	powerpnt.exe	10.0.2526.0	002b3a38	1	9	1	328989
Filename	Version	szSymbol	FrameLevel	iStatus	cCabs					
powerpnt.exe	10.0.2526.0	POWERPNT.EXEIOEShapeTable__Regroup	0	1	1					

szStageOne: \StageOne\powerpnt_exe\10_0_2526_0\powerpnt_exe\10_0_2526_0\002b3a38.htm

Related Buckets

Callstack Tree

Outline level: 0 All

- (0) POWERPNT.EXE ! OEShapeTable__Regroup + 0x20 (1 cab)
 - (1) POWERPNT.EXE ! SLEdtTableSelection__SetInfo + 0x2e
 - (2) POWERPNT.EXE ! OETableSelection__FApplyEscherProperties + 0x1b7
 - (3) POWERPNT.EXE ! BordersDialogUser__OnUpdateTarget + 0x43a
 - (4) POWERPNT.EXE ! PreviewDialogUser__OnTerminate + 0x87
 - (5) POWERPNT.EXE ! DLDialog__DoOnTerminate + 0x20

Local intranet

Connected To RAID

328989 - Bug Detail - Microsoft Internet Explorer

File Edit View Favorites Tools Help Links »

Back Forward Stop Home Search Favorites History

Address <http://officewatson/dwi/bug.asp?DB=1&bugid=328989> Go

Bug 328989--Crash when pasting table cells

Status	Opened	Resolved	Project
Status: Resolved	Date: 2/1/2001	Date: 2/6/2001	GroupName: PowerPoint
Assigned To: minghc	By: minghc	By: y-arnold	Area: Text
Issue Type: Code Defect	Rev: 10.00.00.2524	Resolution: Fixed	SubArea: Table
Severity: 1	Source:	Rev: 10.00.00.2606	FixByRel: RTM
Priority:	Source ID:	Cause: Bug fix (regression)	Triage: Must
Accessibility:	Beta ID:	Change: Several Components	Platform: All
Changed Date: 2/7/2001	How Found: Ad Hoc	Closed Date:	DevRef: must
By: eunicey	Language: All / English	By:	LocalFixDate: 2/1/2001 3:53:35 PM
Environment: Compaq Deskpro AP240-733 W2KUS		KB Article:	

Description:

===== Opened by minghc on 02/01/2001 02:46PM =====
Office 10 Setup 2524 Ship -- Pro+ English
(also repro with 2529 Debug on WT55OFF10D)

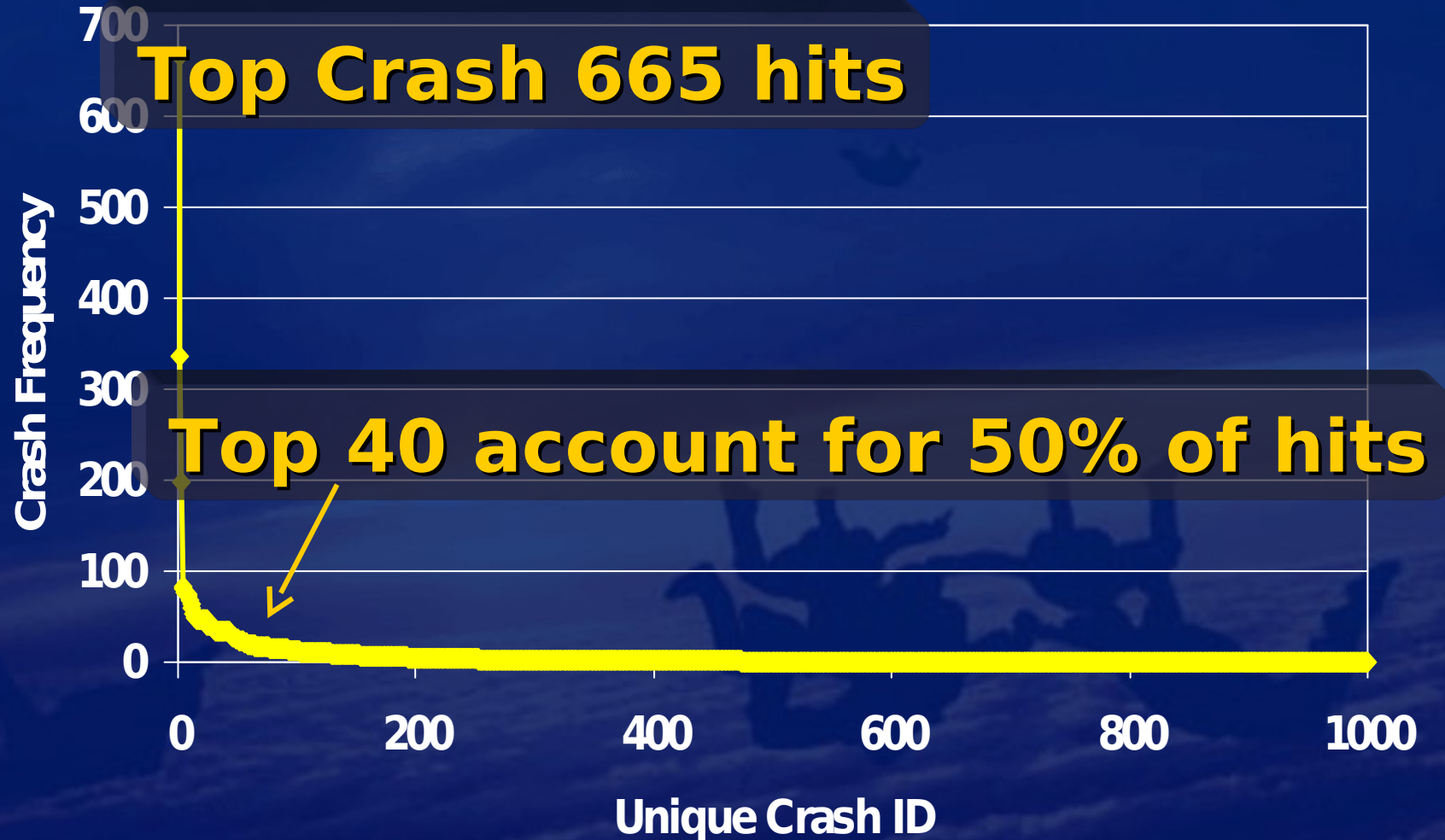
Steps:

- start PP
- open attached test file (457363.ppt)
- mouse drag to select all rows except row #1
- press <Ctrl-C> to copy it
- click on the first cell of the last row
- press <Ctrl-V> to paste it

Result:

Done Local intranet

Crash Profile For RC



Sustaining Engineering

- MOSE takes over when we ship
- Continues to aggressively analyze and drive resolution
- Attack the 'fat end of the curve'



Response

Error Reporting



Thank you for taking the time to report this problem. We apologize for the inconvenience this error has caused you.

Further information about this error may be found by following the link below.

[More information](#)

Close

Corporate Crash Tracking

- Policy to specify a local dump server
 - No IIS or SQL required
 - Modest HD space required (2-7GB)
- Also for corporate tracking and escalation
 - Solution based on OAC feedback
 - CER client to manage admin-driven uploads
 - Flat crash log with user and machine data

Policy

- **Settings** (for example SUBPATH=Microsoft\Office\10.0\Common)
 - HKCU\Software\Policies\SUBPATH\DWFileTreeRoot (SZ)
 - HKCU\Software\Policies\SUBPATH\DWTracking (DWORD)
 - HKCU\Software\Policies\SUBPATH\DWNoExternalURL (SZ)
 - HKCU\Software\Policies\SUBPATH\DWNoFileCollection (DWORD)
 - HKCU\Software\Policies\SUBPATH\DWNoSecondLevelCollection (DWORD)
 - HKCU\Software\Policies\SUBPATH\DWURLLaunch (SZ)
 - HKCU\Software\Policies\SUBPATH\DWAlwaysUpload (DWORD)
 - HKCU\Software\Policies\SUBPATH\DWNeverUpload (DWORD)
 - HKCU\Software\Policies\SUBPATH\DWReporteeName (SZ)
- **Context and Priority**
 - 4) Registry Policy Tree; 3) Registry Regular Tree, 2) status.txt on leaf of filetree; 1) policy.txt at root of filetree

Corporate File Tree (1 of 4)

- Layout of the root

```
\
...   crash.log      (optional)
...   policy.txt     (optional)
...   cw.log
...   cwlog.<n>       (optional)

...   <status>\      (R0)
...   <cabs>\         (W0)
...   <count>\       (RW)
```

Status, Cabs and Count contain a full tree beneath them. Policy.txt is a global policy tree. Crash.log is a flat crash log with user and machine info.

Corporate File Tree (2 of 4)

- Layout of the cabs tree

```
...      <cabs>\
...      ...   <app>\
...      ...   ...   <version>\
...      ...   ...   ...   <module>\
...      ...   ...   ...   ...   <version>\
...      ...   ...   ...   ...   ...   <offset>\
...      ...   ...   ...   ...   ...   ...   one.cab
...      ...   ...   ...   ...   ...   ...   two.cab
...      ...   ...   ...   ...   ...   ...   one.old
```

This (WO) tree is managed by the DW clients and contains all the CABs. When CorpWatson uploads a cab, it is renamed to “.old”.

Corporate File Tree (3 of 4)

- Layout of the count tree

```
...      <count>\
...      ...      <app>\
...      ...      ...      <version>\
...      ...      ...      ...      <module>\
...      ...      ...      ...      ...      <version>\
...      ...      ...      ...      ...      ...      <offset>\
...      ...      ...      ...      ...      ...      ...
count.txt
...      ...      ...      ...      ...      ...      ...
hits.log
```

This (RW) tree is managed by the DW clients and contains a count of CABs and hits at each leaf.

Corporate File Tree (4 of 4)

- Layout of the status tree

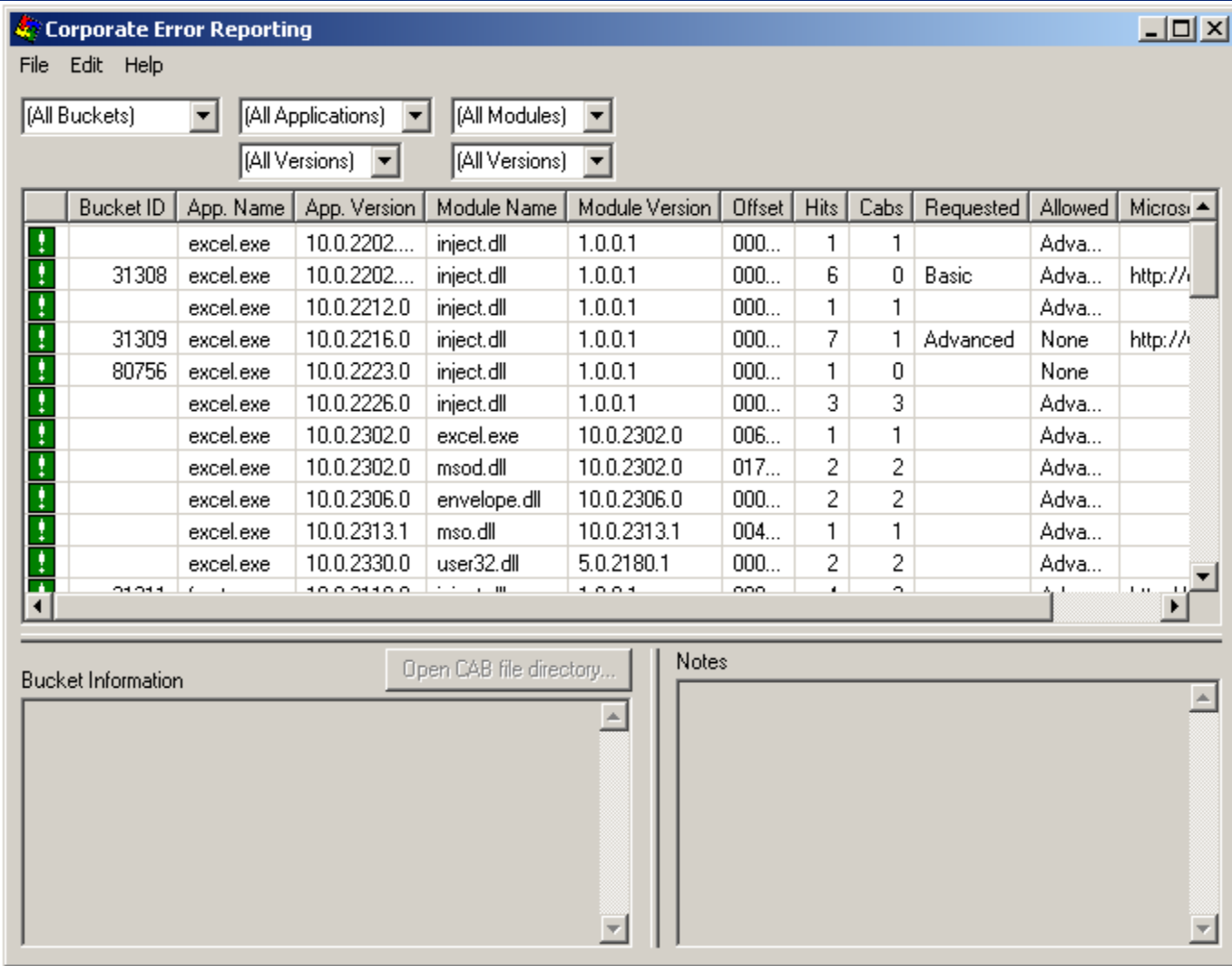
```
...      <status>\
...      ...      <app>\
...      ...      ...      <version>\
...      ...      ...      ...      <module>\
...      ...      ...      ...      ...      <version>\
...      ...      ...      ...      ...      ...      <offset>\
...      ...      ...      ...      ...      ...      ...
      status.txt
```

This tree contains a status.txt file at each leaf. It is managed by admins and CorpWatson. Admins have RW permission and users have RO permissions. The leaf node status.txt overrides the root (global) policy.txt.

CorpWatson Client (CER)

- Help admins manage the file tree
 - Easily set global policy
 - Per bucket policy overrides
 - View and sort by hits, apps, data requests
- Synchronize data with Microsoft
 - Upload CABs
 - Download status info, data requests

CER Visuals



Corporate Error Reporting

File Edit Help

(All Buckets) (All Applications) (All Modules)
(All Versions) (All Versions)

	Bucket ID	App. Name	App. Version	Module Name	Module Version	Offset	Hits	Cabs	Requested	Allowed	Micros
!		excel.exe	10.0.2202...	inject.dll	1.0.0.1	000...	1	1		Adva...	
!	31308	excel.exe	10.0.2202...	inject.dll	1.0.0.1	000...	6	0	Basic	Adva...	http://
!		excel.exe	10.0.2212.0	inject.dll	1.0.0.1	000...	1	1		Adva...	
!	31309	excel.exe	10.0.2216.0	inject.dll	1.0.0.1	000...	7	1	Advanced	None	http://
!	80756	excel.exe	10.0.2223.0	inject.dll	1.0.0.1	000...	1	0		None	
!		excel.exe	10.0.2226.0	inject.dll	1.0.0.1	000...	3	3		Adva...	
!		excel.exe	10.0.2302.0	excel.exe	10.0.2302.0	006...	1	1		Adva...	
!		excel.exe	10.0.2302.0	msod.dll	10.0.2302.0	017...	2	2		Adva...	
!		excel.exe	10.0.2306.0	envelope.dll	10.0.2306.0	000...	2	2		Adva...	
!		excel.exe	10.0.2313.1	mso.dll	10.0.2313.1	004...	1	1		Adva...	
!		excel.exe	10.0.2330.0	user32.dll	5.0.2180.1	000...	2	2		Adva...	
!	31311	excel.exe	10.0.2312.0	inject.dll	1.0.0.1	000...	1	0		Adva...	http://

Bucket Information

Open CAB file directory...

Notes

PSS Interaction Scenarios

- Support Engineer receives a call/escalation:
 - Customer w/ the crash dialog up or a reproducible crash
 - Non-connected customer complaining of fatal events
- Developer debugging an unsolved bucket:
 - Drills down into PSS incident data to help nail a repro
 - PSS is a partner to gather extra information to help solve an 'in-progress' bucket
- MOSE trying to prioritize buckets and fixes:
 - Can correlate PSS labor and incidents to particular buckets
- Connected User who doesn't call PSS:
 - PSS creates KB deployed via Server Response

PSS Interaction (cont.)

- Client logging of bucketing data
 - UI in MSINFO and crash details dialog
 - Customer reads this data to PSS
 - PSS can query the DW database
 - Everyone at MS is on the 'same page'

Technical Information:

```
App: testcrash.exe Ver: 10.0.1029.1  
Mod: testcrash.exe Ver: 10.0.1029.1 Offset 000014eb
```

Privacy Philosophy

- Informed Consent
 - Give detailed explanations of what will be uploaded
- Opt-in. Default value is always “no”
- Intent = Fix Bugs
- Intent != Track users
 - Online Data Collection Policy:
<http://watson.microsoft.com/dw/dcp.asp>

The background of the slide is a blue-tinted photograph of several people skydiving. They are in various poses, some with arms outstretched, against a backdrop of white clouds. The overall tone is professional and dynamic.

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